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**ABSTRACT**

The present invention relates generally to telecommunications, and more specifically, to an improved operating system and apparatus for telecommunications networks. Currently, the majority of telecommunication services are provided over the Public Switched Telephone Network and Internet. Existing telephony systems suffer from a number of problems including system complexity, limited access and implementation of services on fixed hardware, which results in long time to bring new products to market. Internet applications cannot guarantee quality of service in the transmission. These systems are therefore inflexible and inefficient which limits their ability to carry new services. The invention provides a distributed and real-time operating system for use over varied telecommunications networks. As well, methods of implementing synchronized execution, fault tolerance and loading management over this network, are also described. The application of this operating system to existing networks allows new services to be provided.